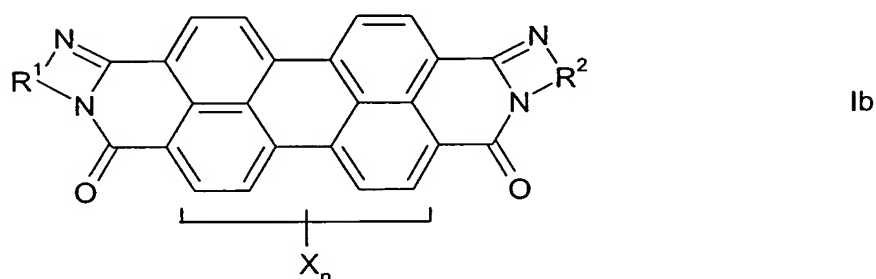
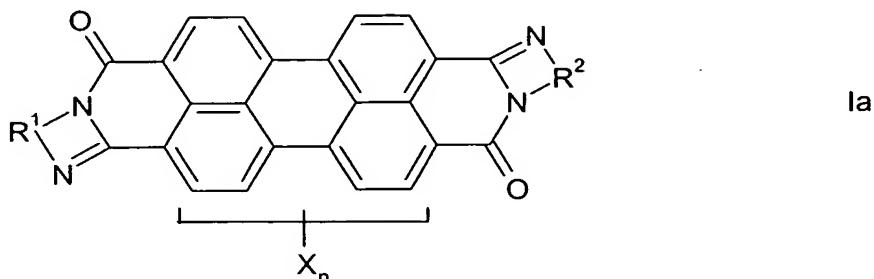


What is claimed is:

1. A black perylene pigment which comprises one of the isomers of the formula Ia or Ib

5



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in which

R^1, R^2 are each independently phenylene, naphthylene or pyridylene, each of which may be mono- or polysubstituted by C_1 - C_{12} -alkyl, C_1 - C_6 -alkoxy, hydroxyl, nitro and/or halogen;

X is halogen;

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n is from 0 to 4,

or comprises a mixture of both isomers and has a blackness value ≥ 210 in an alkyd/melamine baking varnish.

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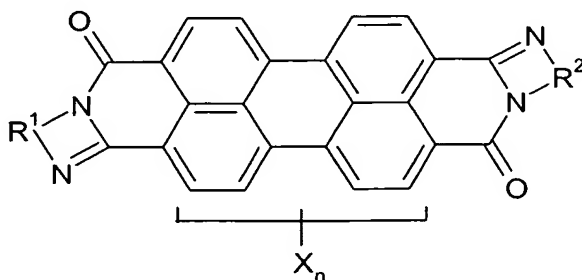
2. The perylene pigment according to claim 1, in which the R^1 and R^2 radicals are the same and are each unsubstituted phenylene or naphthylene.

3. A process for preparing perylene pigments according to claim 1 or 2, which comprises subjecting the crude pigments obtained in the synthesis

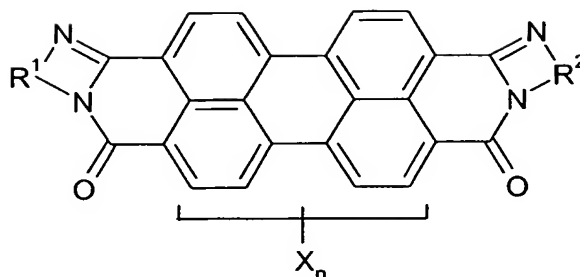
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- a) to a comminution and, if desired, to a recrystallization in a liquid medium or
- b) to a comminution with simultaneous recrystallization.

4. The process according to claim 3, wherein the crude pigments are subjected to a high-energy powder grinding.
5. The process according to claim 3, wherein the crude pigments are initially subjected to a dry grinding in the presence or absence of a salt as a grinding assistant and then to a recrystallization in an organic solvent, if desired in a mixture with water, under hot conditions.
6. The process according to claim 3, wherein the crude pigments are subjected to kneading under hot conditions in the presence of an organic solid having recrystallizing action and of an inorganic salt.
7. The process according to claim 3, wherein the crude pigments are subjected to an aqueous wet grinding in the presence of an organic solvent having recrystallizing action.
8. A process for preparing perylene pigments according to claim 1 or 2, which comprises subjecting the crude pigments obtained in the synthesis, if desired after a comminution, to a swelling in a concentrated acid.
9. The process according to claim 3 or 8, wherein the crude pigments are prepared by condensing perylene-3,4:9,10-tetracarboxylic dianhydride with an aromatic ortho- or peri-diamine which has the arylene radical R^1 or R^2 and if desired X radicals, and subsequently cyclizing in the presence of phenol or a nitrogen-containing, nonfused heteroaromatic.
10. The process according to claims 3 to 9, which is carried out in the presence of a pigment synergist and/or pigment additive.
11. A process for preparing crude perylene pigments which comprise one of the isomers of the formula Ia or Ib



Ia



1b

in which

R^1, R^2 are each independently phenylene, naphthylene or pyridylene, each of which may be mono- or polysubstituted by C_1 - C_{12} -alkyl, C_1 - C_6 -alkoxy, hydroxyl, nitro and/or halogen;

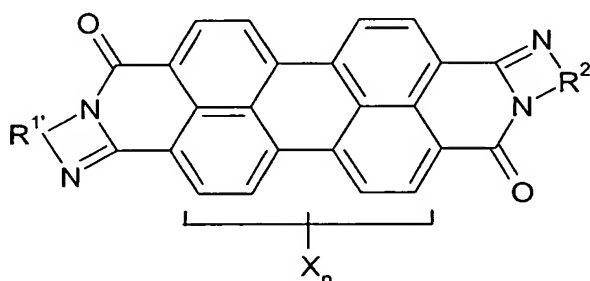
X is halogen;

n is from 0 to 4,

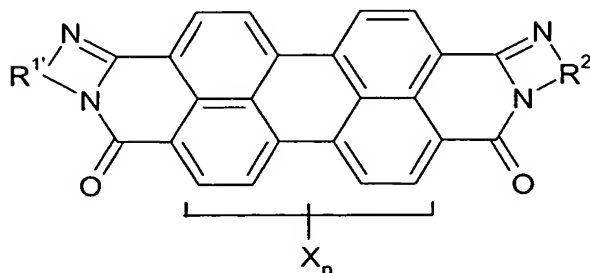
or a mixture of both isomers, by condensing perylene-3,4:9,10-tetracarboxylic dianhydride with an aromatic ortho-diamine which has the arylene radical R^1 or R^2 , and subsequently cyclizing, which comprises carrying out condensation and cyclization in phenol or a nitrogen-containing, nonfused heteroaromatic as a reaction medium.

12. The process according to claim 11, which is undertaken in the presence of a pigment synergist and/or pigment additive.

13. A pigment synergist based on one of the isomers of the formula Ia' or Ib'



1a'



1b'

in which

- 5 R^{1*}, R^{2*} are each independently phenylene, naphthylene or pyridylene, each of which is mono- or polysubstituted by $-\text{COO}^- M^+$, $-\text{COOR}^3$, $-\text{CONR}^3R^4$, $-\text{COO}^- N^+R^3R^4R^5R^6$, $-\text{SO}_2\text{NR}^3R^4$, $-\text{CH}_2\text{NR}^3R^4$, $-\text{CH}_2N^+R^3R^4R^5R^6 R^3-\text{COO}^-$ and/or $-\text{CH}_2R^7$, and may additionally be mono- or polysubstituted by $\text{C}_1\text{-C}_{12}$ -alkyl, $\text{C}_1\text{-C}_6$ -alkoxy, hydroxyl, nitro and/or halogen;
- 10 R^3, R^4, R^5, R^6 are each independently hydrogen; $\text{C}_1\text{-C}_{12}$ -alkyl or $\text{C}_2\text{-C}_{12}$ -alkenyl whose hydrocarbon chain may in each case be interrupted by one or more $-\text{O}-$, $-\text{S}-$, $-\text{NR}^8-$, $-\text{CO}-$ or $-\text{SO}_2-$ moieties, and/or be mono- or polysubstituted by hydroxyl, halogen, aryl, $\text{C}_1\text{-C}_4$ -alkoxy and/or acetyl; $\text{C}_3\text{-C}_8$ -cycloalkyl whose carbon skeleton may be interrupted by one or more $-\text{O}-$, $-\text{S}-$, $-\text{NR}^8-$ or $-\text{CO}-$ moieties, and/or be substituted by acetyl;
- 15 R^7 is phthalimidyl;
 R^8 is hydrogen or $\text{C}_1\text{-C}_8$ -alkyl;
 M^+ is hydrogen or a metal cation;
 X is halogen;
 n is from 0 to 4,

20 or on a mixture of both isomers.

14. The use of perylene pigments according to claim 1 or 2 for coloring high molecular weight organic and inorganic materials of natural and synthetic origin.
- 25 15. The process according to claim 14, wherein coatings, inks including printing inks, toners, polymers, paints, plastics articles, glasses, silicatic layer systems and organic-inorganic composites are colored.
- 30 16. The use of perylene pigments according to claim 1 or 2 for coloring plastics articles which are used for laser penetration welding.
17. The use of perylene pigments according to claim 1 or 2 for coloring leather and leather-like materials.
- 35 18. The use of perylene pigments according to claim 1 or 2 as charge-generating material for electrophotography and as constituent of the black matrix in LC displays.
- 40 19. The use of perylene pigments according to claim 1 or 2 for preparing water-, polymer- or polyolefin wax-based pigment preparations.